Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of fabricating an integrated circuit, the method comprising:

forming a barrier material layer along lateral side walls and a bottom of a via, the via electrically connecting a first conductive layer and a second conductive layer; and

tilt implanting at an angle between one and ten degrees, a metal into the barrier material layer at [[a]] an implantation energy between 5.0 keV and 0.5 keV, the implanted metal making the barrier material layer more resistant to copper diffusion.

2. (Original) The method of claim 1, wherein the implanted metal is selected from a group of metals which upon implanting make the barrier material layer amorphous.

3. (Currently Amended) The method of claim 1, wherein implanting a metal into the barrier material layer includes implanting a low dose of the metal, wherein the low dose comprises $2e^{14}$ to $2e^{15}$ atoms/cm^2.

4. (Previously Presented) The method of claim 1, wherein implanting a metal into the barrier material layer includes implanting the metal into the lateral side walls of the via.

5. (Original) The method of claim 4, wherein implanting a metal at an angle includes providing an implant that makes lateral side walls of the via amorphous and resistant to copper diffusion.

6. (Original) The method of claim 1, wherein the implanted metal is selected from a group consisting of Hafnium (Hf), Lanthanum (La), Barium (Ba), Tin (Sn), and Zinc (Zn).

7. (Original) The method of claim 1, wherein the implanted metal is selected from a group of heavy metals.

8. (Original) The method of claim 1, wherein the barrier material layer has a size of a thickness of between 10 and 300 Angstroms.

9. (Original) The method of claim 1, wherein the implanted metal forms an intermettallic with the second conductive layer, the second conductive layer including copper.

10. (Previously Presented) A method of implanting copper barrier material to improve electrical performance in an integrated circuit fabrication process, the method comprising:

providing a copper layer over an integrated circuit substrate;

providing a barrier material at a bottom and sides of a via positioned over the copper layer to form a barrier material layer separating the via from the copper layer;

amorphizing the barrier material layer by implanting at an angle between one and ten degrees, a metal into the barrier material layer at [[a]] an implantation energy between 5.0 keV and 0.5 keV, thereby making the barrier material layer more resistant to copper diffusion from the copper layer; and

providing a conductive layer over the via such that the via electrically connects the conductive layer to the copper layer.

11. (Original) The method of claim 10, wherein the amorphizing step includes implanting a low dose metal species.

12. (Previously Presented) The method of claim 10, wherein the amorphizing step includes implanting a metal species into the barrier material layer into the sides of the via.

13. (Previously Presented) The method of claim 12, wherein the metal species is selected from a group consisting of Hafnium (Hf), Lanthanum (La), Barium (Ba), Tin (Sn), and Zinc (Zn).

14. (Original) The method of claim 10, wherein the barrier material layer is Tantalum (Ta), Titanium Nitride (TiN), Titanium Silicon Nitride (TiSiN) or Tungsten Nitride (WNx).

15. (Currently Amended) A method of forming a via in an integrated circuit, the method comprising:

depositing a copper layer;

depositing an etch stop layer over the copper layer;

depositing an insulating layer over the etch stop layer;

forming an aperture in the insulating layer and the etch stop layer;

providing a barrier material at a bottom and sides of the aperture to form a barrier material layer providing separation from the copper layer;

tilt implanting a metal species at an angle between one and ten degrees, into the barrier material layer at [[a]] an implantation energy between 5.0 keV and 0.5 keV, the implanted metal species making the barrier material layer more resistant to copper diffusion from the copper layer;

filling the aperture with a via material to form [[a]] the via; and

providing a conductive layer over the via such that the via electrically connects the conductive layer to the copper layer.

16. (Original) The method of claim 15, wherein implanting a metal species into the barrier material layer includes implanting a low dose of the metal.

17. (Previously Presented) The method of claim 15, wherein implanting a metal species into the barrier material layer includes implanting the metal into the sides of the aperture.

18. (Previously Presented) The method of claim 15, wherein the metal species is implanted at a dose of $2e^{14}$ to $2e^{15}$ atoms/cm^2 at an energy of 0.5 to 5 keV.

19. (Original) The method of claim 15, wherein the barrier material layer and the copper layer form an intermettallic.

20. (Original) The method of claim 15, wherein the implanted metal species is selected from a group of heavy metals.